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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,358	06/26/2003	Naohiko Kikuchi	1403-0250P	4535

2292 7590 12/06/2005

BIRCH STEWART KOLASCH & BIRCH  
PO BOX 747  
FALLS CHURCH, VA 22040-0747

EXAMINER
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MAKI, STEVEN D

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 12/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/606,358

**Applicant(s)**

KIKUCHI ET AL.

**Examiner**

Steven D. Maki

**Art Unit**

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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1) A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11-16-05 has been entered.

2) The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3) Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 9, there is no clear antecedent basis for "said non-metal short fiber" and as such it is unclear if claim 9 is broadening claim 1 by replacing "glass" with "non-metal". In claim 9, it is suggested to change "said non-metal short fiber" with --said short glass fiber--.

4 ) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5) **Claims 1 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida (EP 1072446) in view of Marzocchi 059 (US 3364059) and Marzocchi 280 (US 3620280).**

Uchida discloses a studless tire having a tread comprising diene rubber and short glass fibers oriented in the thickness direction wherein  $1.1 \leq E1/E2 \leq 4$  and the hardness is 45-75 degrees. The glass fibers have an average fiber diameter of 1-100 micrometers and an average length of 0.1-5 mm. Uchida expresses a desire for the fibers to remain bound to the rubber of the tread to prevent the fibers from dropping from the tread surface during running and thereby deteriorating the effect of pushing the water film generated between the frozen road surface and the tire surface (paragraphs 13, 16). Uchida therefore substantially discloses the claimed invention except for surface treating the short glass fibers.

Marzocchi 059, directed to glass fiber elastomeric systems, teaches that the development of a strong and permanent bonding relationship between glass fibers and elastomeric materials is faced with a number of problems which are peculiar to glass fibers. Glass fibers are non-porous and smooth surfaces. Elastomeric materials are unable to achieve anchorage and are unable to establish a strong grip on the smooth surfaces. Furthermore, the smooth surfaces are dominated by groups which impart hydrophilic characteristics whereby the glass fiber surfaces are preferentially receptive to moisture by comparison with elastomeric materials. As a result, any bonding relationship that is capable of being established between such materials is markedly diminished by the water film that immediately forms to separate the elastomeric material from the glass fiber surfaces in the presence of moisture. Marzocchi 059 teaches improving the bonding relationship of glass fibers with rubber by treating the glass fibers with a treating composition containing an anchoring agent in the form of an organo

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silicon compound or a Werner complex compound in which an organic group attached to the silicon compound contains an SH group and in which the carboxylato group coordinated with the chromium atom of the Werner complex compound contains an SH group. Marzocchi 059 teaches that the glass fibers may be continuous glass fibers, staple glass fibers or chopped glass fibers. Marzocchi 059 teaches that the elastomer includes natural rubber and synthetic rubber. Marzocchi 059 teaches that a strong bonding relationship between the glass fibers and the elastomeric material is retained even in the presence of moisture. See columns 1 and 2.

Marzocchi 280 discloses a pneumatic tire having a tread comprising rubber and chopped structures 83 (figure 5). The chopped structures 83 are made from a yarn comprising glass filaments wrapped about an organic core. During manufacture of the yarn and prior to incorporation of the chopped yarn into the tire tread, the glass filaments are treated with an anchoring agent (col. 5 lines 57-68).

As to claims 1 and 9, it would have been obvious to one of ordinary skill in the art to treat the short glass fibers of Uchida with an anchoring agent (surface treating agent) comprising sulfur containing mercaptosilane to improve adhesion of the short glass fibers to the rubber of the tire tread since (1) Uchida expresses a desire for the glass fibers to remain bound to the rubber of the tread to prevent the glass fibers from dropping from the tread surface so as to prevent deterioration of the effect of pushing the water film generated between the frozen road surface and the tire surface (paragraphs 13, 16) and (2) the secondary art to Marzocchi 059 and Marzocchi 280 provide ample motivation (strong bond between glass fibers and rubber even in the

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presence of moisture) to treat Uchida's glass fibers for a rubber tire tread with an anchoring agent comprising sulfur containing mercapto silane.

Applicant argues that the claimed invention exhibits unexpected results of improved braking properties and abrasion resistance properties as evidenced by examples and comparative examples of the specification. The examples in the specification have been considered but are not persuasive of obviousness since (1) Uchida, directed to a tire tread comprising radially oriented glass fibers and having improved braking performance on ice and abrasion resistance, teaches binding the fibers to the rubber of the tread to prevent the fibers from dropping from the tread surface during running so as to prevent deterioration of the effect of pushing the water film generated between the frozen road surface and the tire surface and (2) Marzocchi 069 and Marzocchi 280 motivate one of ordinary skill in the art to use the claimed surface treating agent on Uchida's glass fibers to form a strong bond between the glass fibers and rubber and retain this strong bond even in the presence of water.

#### Remarks

6) Applicant's arguments with respect to claims 1 and 9 have been considered but are moot in view of the new ground(s) of rejection.

7) No claim is allowed.

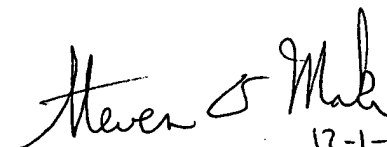
8) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 8:30 AM - 5:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Steven D. Maki  
December 1, 2005

  
STEVEN D. MAKI  
PRIMARY EXAMINER  
12-1-05